What is claimed is:

1. A projection optical system which projects luminous flux from an image forming element which forms an original image onto a projection surface which is oblique to a central principal ray which is a principal ray of luminous flux traveling from the center of the original image to the center of a finally formed image formed on the projection surface, the projection optical system comprising:

a plurality of reflecting surfaces, each of the surfaces having a curvature,

wherein the following expression is satisfied:

$$0 < (S0 \times |\beta|)/S1 < 8$$

where S0 represents a length of a path of the central principal ray from a pupil surface closest to the projection surface to a final reflecting surface closest to the projection surface of the plurality of reflecting surfaces, S1 represents a length of a path of the central principal ray from the pupil surface to the projection surface, and β represents a magnification in an oblique projection direction.

2. The projection optical system according to claim 1, wherein further the following expression is satisfied:

$$0 < (S0 \times |\beta|)/S1 < 5.$$

3. The projection optical system according to claim 1,

wherein the reflecting surfaces are rotationally asymmetric surfaces.

4. The projection optical system according to claim 1, wherein an intermediate image of the image forming element is formed in the projection optical system.

5. The projection optical system according to claim 1, further comprising:

at least one optical element having a refractive power.

6. A projection optical system which projects luminous flux from an image forming element which forms an original image onto a projection surface which is oblique to a central principal ray traveling from the center of the original image to the center of a finally formed image formed on the projection surface, the projection optical system comprising:

a plurality of reflecting surfaces, each of the surfaces having a curvature; and

an aperture stop which is disposed closer to the image forming element than to a final reflecting surface closest to the projection surface of the plurality of reflecting surfaces,

wherein an image of the aperture stop is formed between the aperture stop and the final reflecting surface.

7. The projection optical system according to claim 6, wherein the reflecting surfaces are rotationally asymmetric surfaces.

8. The projection optical system according to claim 6, further comprising:

at least one optical element having a refractive power.

9. The projection optical system according to claim 6, wherein, among the plurality of reflecting surfaces, at least one of reflecting surfaces through which luminous flux from the position where a pupil image is formed in the projection optical system to the projection surface passes has a negative optical power.

10. The projection optical system according to claim 6, wherein, among the plurality of reflecting surfaces, a first reflecting surface counting from the position where the image of the aperture stop is formed toward the image forming element has a positive optical power, and a first reflecting surface counting from the position where the image of the aperture stop is formed toward the projection surface has a negative optical power.

11. The projection optical system according to claim 6, wherein a normal line to the image forming element substantially forms an angle of 90 degrees with a normal

line to the projection surface.

12. A projection type image display apparatus comprising:

an image forming element which forms an original image; and

the projection optical system according to claim 1.

13. The projection type image display apparatus according to claim 12, further comprising a plane reflecting surface on an optical path from the projection optical system to the projection surface.

14. A projection type image display apparatus comprising:

an image forming element which forms an original image; and

the projection optical system according to claim 6.

15. The projection type image display apparatus according to claim 14, further comprising a plane reflecting surface on an optical path from the projection optical system to the projection surface.

16. An image display system comprising:

the projection type image display apparatus according to claim 12 or 14; and

an image information supply apparatus which supplies image information for displaying an original image on the

image forming element to the projection type image display apparatus.